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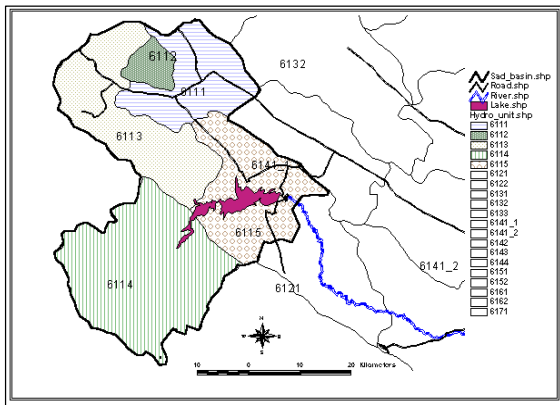
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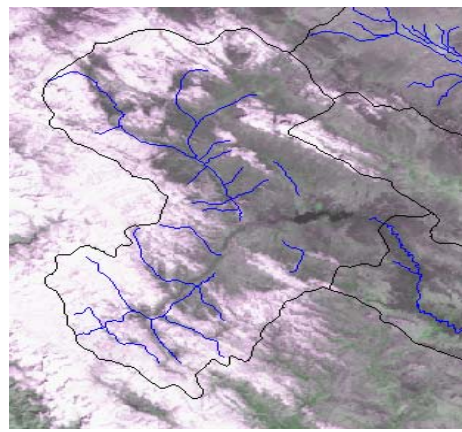
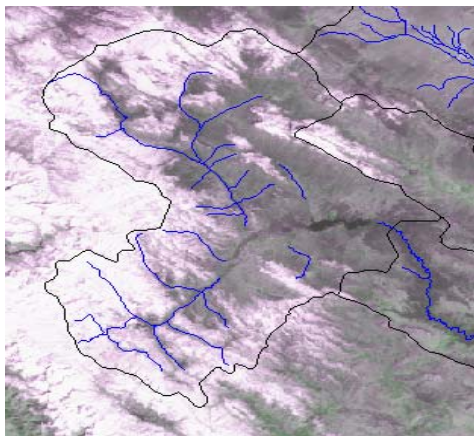
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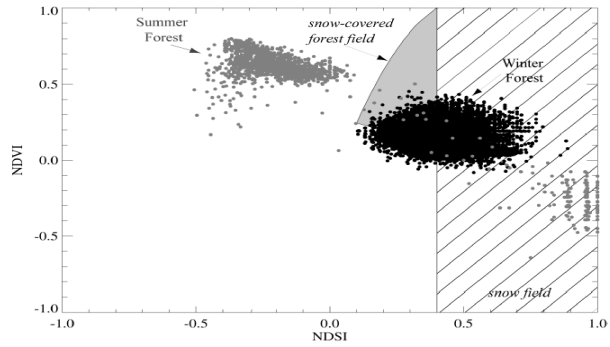
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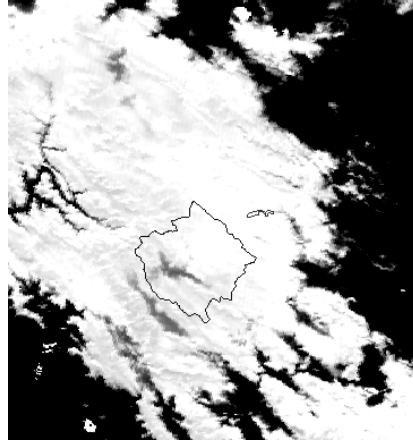
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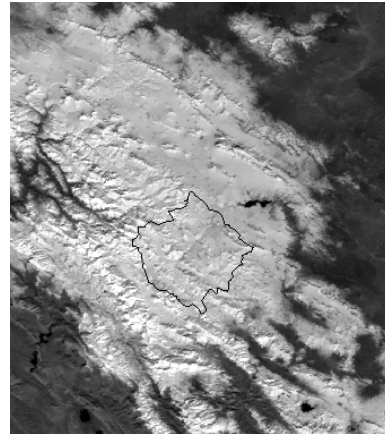
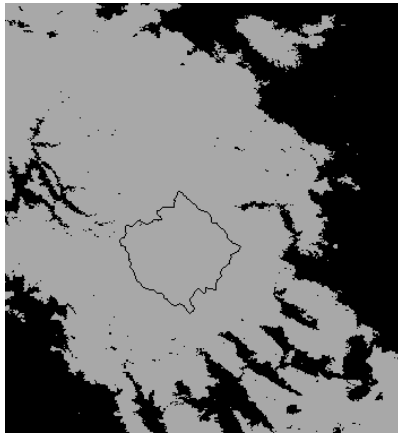
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## Using MODIS Images and NDSI Index for preparation snow cover maps

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### Abstract

Over 40% of the northern hemisphere is covered with seasonal snow. Snow covered area is a huge water resource on most part of the world and mountainous areas. Snow-cover and its equivalent water, supplies 1/3 of the water requirements for farming and its land irrigation throughout the world. In most northern and alpine environments, snowmelt runoff is responsible for both the annual maximum instantaneous discharge and a major portion of the annual flow. The high albedo of snow coupled with its large areal extent makes it a strong influence on the Earth's radiation budget. Snow cover monitoring is necessary for climatologists. Therefore, continuous snow cover monitoring and survey of snow cover maps due to higher efficiency of snow cover in different studies is very necessary. The most efficient means of monitoring snow-cover extent is by remote monitoring from satellites. MODIS compared with other images like NOAA has better spatial resolution and more bands and is better for survey. In this research by MODIS data in Ghaleh-Shahrokh sub-basin, we prepared snow cover map. The results compared with real snow cover map and showed higher precision. Finally, these maps are used as basic maps in various cases such as estimation of snowmelt runoff.

**Keywords:** Remote Sensing, Satellite image, MODIS, Separate snow pixels, NDSI